Borough of Margate.

ANNUAL REPORT

OF THE

Medical Officer of Health

AND THE

METEOROLOGICAL REPORT

FOR THE YEAR 1905.

Margate:
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—
1906.

BOROUGH OF MARGATE.

ALDERMAN WILLIAM LEACH LEWIS, J.P., MAYOR.

Sanitary and Sewerage Committee:

COUNCILLOR CARTER, CHAIRMAN.
ALDERMAN HUGHES.
COUNCILLOR AMOS.
„ EVANS.
„ PALMER-PALMER.
„ SMITH.
„ WHITE.

Medical Officer of Health:

BERTRAM THORNTON.

Sanitary Inspector:

EDWARD ELLIOT.

Town Clerk:

EDWARD BROOKE.

SUMMARY OF STATISTICS AND INFORMATION RELATING TO THE BOROUGH OF MARGATE.

Area of Borough.

1875 Acres (including 386 Acres of Foreshore).

Geological Formation. Subsoil, Chalk.

Population.

Census of March, 1901—**23,118.**
Estimated to middle of 1905—**24,960.**
Estimated maximum population during season—**100,000.**

Rainfall.

During 1905 **21.18** inches.—Number of days on which rain fell—**172.**

Average for last 10 years **21.25** inches.

Water Supply.

Constant service from the chalk from the district of Wingham, 14 miles from Margate.

Sewage Disposal.

By water carriage, outfall into the deep sea two miles east of Margate Jetty.

Number of Inhabited Houses. (1901) **4,359.**

Assessable Value. £172,754.

Rateable Value. £174,501 10s. 0d.

Rates. Borough and District 4/9. Poor Rate 1/9.

Birth Rate. **16.0** per 1000.

Death Rate (Corrected) **12.8** per 1000.

If deaths of Visitors are excluded the rate is **10.9** per 1000.

To His Worship the Mayor, Aldermen and Councillors of the Borough of Margate.

GENTLEMEN,

I have the honour to submit to you my Annual Report for the year 1905, and it is gratifying to be able to again record an exceptionally good year as regards the health of the Borough. Certain portions of the Report may appear to be too full of details, but it is read by many who are not conversant with the physical characteristics of the district and it is specially prepared for the information of the Local Government Board, the Kent County Council and the Secretary of State for the Home Department. Some of the information also must necessarily be repeated from year to year. I beg to thank the members of the Sanitary Committee as well as the Borough Officials for their kindness and ready help to me during the past year. I am also much indebted for kind assistance to the medical profession in Margate.

I am, Gentlemen,

Your obedient servant,

BERTRAM THORNTON,

Medical Officer of Health.

February 10th, 1906.

PART 1.

General Information on the Sanitary Features of the Borough.

Physical Characteristics.

The Borough of Margate extends over an area of 1,922 acres, which includes 386 acres of foreshore. The Town follows the coast-line, which faces the North and North-West. Situated at the N.E. corner of Kent, it is exposed to sea breezes from all quarters except the West. The subsoil is chalk, and the Town is divided by a valley running East and West. Owing to this valley and the general undulations of the ground levels, the town is exceptionally favoured as regards surface drainage ; it is a notable fact that even after the heaviest rainfall the streets become dry in a very short period of time. The amount of vegetation in the town and neighbourhood is very limited. The streets, except in the lower and older parts of the town, are well laid out, and there are numerous large open spaces ; the sea breezes are thus able to circulate freely in all parts of the town. To the above factors may be attributed the noted dryness of the climate of Margate. It is not improbable that the large area of foreshore (386 acres), with its sand and seaweed-covered rocks, may also materially add to the salubrity of the air when the wind sets in from the sea.

House Property.

The House Property in Margate is, on the whole, of good construction, a large proportion of the houses in all parts of the Borough being used as lodging houses in the summer months. Rents of all classes of houses are comparatively high, and this fact, combined with the rating which roughly amounts to one third of the rental, makes it difficult for the working classes to secure small cottages at a rent which will enable them to live without the tendency to overcrowd by letting apartments in the summer. There is one common Lodging House which has a capacity of 12 beds. There are a few congested courts in the neighbourhood of King Street, and in the Upper High Street, that are not desirable habitations from a health point of view.

Water Supply.

The new supply of water from Wingham, which was opened in August, 1903, has been much appreciated. The old supply from local sources had become so impregnated with salt (as much as 170 grains to the gallon) that it was a subject of universal complaint with visitors. The new source is situated in the district of Wingham, 14 miles from Margate, and the water is obtained from the chalk. The catchment area extends over about 15 miles of open country, and was specially selected by the Engineer, Mr. Albert Latham, on account of its freedom from any possible source of pollution, the site being approved by such eminent authorities as Mr. Charles Hawksley, C.E., Mr. Edward Eaton, C.E., and Mr. William Whitaker. The cost of this supply was £120,000, including the supply of several villages in the neighbourhood of the Works.

I am indebted to Mr. Barron, C.E., late Water Engineer to the Borough, for the following information:—The length of Mains laid in connection with this scheme was 51 miles. A Reservoir capable of holding 1,000,000 gallons has been erected at Flete, 2½ miles from Margate, at a height of 177 feet above Ordnance Datum, from which the water is able to flow by gravitation to the highest points in the town. The original rest level of the water was about 34.00 above Ordnance Datum before pumping operations commenced. The total length of adit originally proposed and shown on the parliamentary plan was 9,300 feet, of which it has at present only been necessary to drive 3,650 feet; the supply obtained from this length of adit being found to be more than equal to any likely demand in the early future. The amount of water pumped from adits when driving was stopped was 2¾ million gallons per diem.

The following tables show the amount of water pumped, and the levels on certain days in the years 1904 and 1905—

Date. 1904.	Total Consumption in Gallons.	Level of Water in Well. Start. Above O.D.	 Stop. Above O.D.	Daily fall recovered during night.
January 1st ..	688·900	34·25	32·00	2·25
April 1st	801·020	34·50	33·00	1·50
July 1st	1·044·453	30·50	28·25	2·25
October 1st ..	909·205	27·75	26·00	1·75
*September 13th ..	1·387·870	27.25	23·00	4·25

Mr. Stanley, Manager to the Waterworks Department, has kindly supplied the following figures:—

Date. 1905.	Total Consumption in Gallons.	Level of Water in Well.		Daily fall recovered during night.
		Start. Above O D.	Stop. Above O.D.	
January 1st ..	781·959	27·50	23·50	4· 0
April 1st	932·300	27·50	23·25	4 25
July 1st	1·050·100	26·50	22·75	3·75
October 1st ..	787·000	24·25	21·50	2·75
*August 14th ..	1·444·300	24· 0	20· 0	4· 0

*Greatest daily consumption for the year.

It might appear from the above, on comparing the figues for 1904 with those for 1905, that there was a gradual lowering of the height of the water above O.D; but as during the first week of January, 1906, the height was found to be 27.75, *i.e.* three inches higher than in January, 1905, such a view would probably be incorrect. It seems to suggest rather that the general level of the springs has been reached. It is also to be taken into consideration that there are at the present date 349 houses and meter supplies in the outlying parishes, as against 276 in January, 1905, and 95 in 1904.

A Bacteriological Examination of the water taken from a tap in the Borough is made every month, with a view of getting prompt knowledge of any surface pollution. From the fact that the area from which the water is pumped at Wingham is open country, it is difficult to conceive the possibility of contamination, at the same time the pureness of the water supply is of such vital importance to a health resort, that no precaution should be neglected to ensure perfect safety. The Wingham supply has now been in use for two years and five months, and it is now possible to form some definite estimate of the permanent character of the water from a bacteriological point of view.

Judging from the monthly anaylses made in 1905 the water has established for itself a high reputation as a pure drinking water, the average number of micro-organisms present per C.C. on the fourth day being only 22, and during the months of August, September and October, only ten micro-organisms to the C.C. were counted, the note by the bacteriologist on the October sample being that it was "almost a sterile water."

It may be useful to explain that all natural drinking waters contain micro-organisms, and that the quality of the water for domestic purposes is judged, partly from their number and mostly from their character, a very important factor being the bacteriological stability over considerable periods of time. "A water yielding a steady standard of bacterial content is a much more satisfactory water, from every point of view, than one which is unstable, one month possessing 50 bacteria per C.C. and another month 5,000" (Newman's "Bacteriology and the Public Health"). In the same work the following table by Macé is given :—

	BACTERIA PER C.C.		
Very pure water	0	to	50
Good water	50	,,	500
Passable (mediocre) water...	500	,,	3,000
Bad water	3,000	,,	10,000
Very bad water	10,000	,,	100,000 and over.

It is, therefore, very satisfactory that the samples of Wingham water during the year 1905 only varied between 50 bacteria per C.C. and 10 bacteria per C.C., the average for the whole year being 22. This compares favourably with the purest water supplied to London.

The character also of the micro-organisms present in the samples taken was reported to be satisfactory as regards the absence of rapidly liquefying organisms, and on no occasion were there present any bacteria resembling B. Coli. or other sewage organisms.

The following is the analysis and report on the sample taken in September, practically at the heighth of the season :—

Bacteriological Analysis of Water taken on September 13, 1905.

PHYSICAL :—

Appearance in two-foot tube—

Colour	Nil.
Suspended Matter	,,
Deposit	,,
Odour	,,
Re-action	Neutral.
Temperature	17°C.

BACTERIOLOGICAL :—

I. Quantitative Exam. of Micro-Organisms.

10 Organisms per C.C. (average of three gelatine plates at 22° C. on fourth day).

II. Qualitative Exam. of Micro-Organisms.

(*a*) No growth in McConkey's medium.
(*b*) No production of gas in gelatine cultures.
(*c*) No re-action in Parietti Broth.
(*d*) Very slight coagulation of milk cultures on sixth day.
(*e*) No organisms of surface pollution.

Remarks by the Bacteriologist :—An excellent sample of water of high quality.

September 20th, 1905.

The last Chemical Analysis of a Sample of Water was taken on January 17, 1905.

All numerical results expressed in grains per gallon.

Description of Sample	Public Supply.
Appearance	Very Clear.
Colour	Green Blue.
Smell	None.
Chlorine in Chlorides	1·54.
Phosphoric Acid in Phosphates	None.
Nitrogen in Nitrates	0·50.
Ammonia	None.
Albuminoid Ammonia	0·0006.
Oxygen absorbed in 15 minutes	Trace only.
,, ,, ,, 4 hours	0·008.
Hardness before boiling (total)	18·8.
,, after ,, (permanent)	2·3.
Total solid matter	24·57.
Microscopical examination of deposit	Very slight and unimportant.
Chlorine as Salt	2·54.

Remarks :—The above results are satisfactory and indicate water very pure organically and free from sewage percolation.

The Microscopical examination calls for no adverse remarks.

SIDNEY HARVEY,
Public Analyst,
Borough of Margate.

South Eastern Laboratory.
January 18th, 1905.

Milk Supply.

In my last report I was not in a position to deal with this subject at any length, but since the supervision of the milk supply has been placed entirely under the control of the Sanitary Department, I am now able to report that the milk supply in the town is satisfactory. It will be seen on referring to the Sanitary Inspector's Special Report, that there are 10 cowkeepers who keep cows within the Borough, and 11 cowkeepers outside the Borough who retail their milk from carts inside the Borough; over the former alone we are able to exercise any direct supervision, and on the whole their premises are satisfactory, a recently constructed cowshed at Shottendane for 16 cows is a model of what these structures should be, another one has also recently been erected in the Dane on modern principles, I trust that they may be imitated by other cowkeepers in Thanet. The present law is very unsatisfactory, inasmuch as it does not give Sanitary Authorities power to inspect cowsheds outside their district. Some of the farms sending milk into the Borough daily are to my personal knowledge excellently managed, and are in all respects satisfactory. As a large proportion of the milk consumed in Margate in the season come from distant parts of the country, we are compelled to take it on trust as regards its cleanliness, as we have no means of supervising the farms from which it is sent; samples, however, are taken at the Margate Stations. It is difficult to induce old-fashioned farmers to appreciate the necessity of ordinary cleanliness, light, and fresh air in all that concerns cows and their milk; they and their employés are frequently either ignorant or indifferent to the disease caused by dirty and polluted milk. In 1901 the Corporation adopted the Model Bye-Laws relating to Cowsheds and Dairies, and they have undoubtedly been of service in improving the quality of the milk produced in the Borough, but there is still room for improvement, especially as regards the keeping clean the udders and teats of the cows and the hands of the milker. I have frequently called attention to neglect and carelessness in this respect. It is difficult to get farmers to insist that manure should be removed frequently, that cows should be kept as clean as is reasonably possible, their teats and udders cleaned with a damp or dry cloth previous to milking, and that the milkers should wash their hands and wear clean aprons or over-alls when milking the cows; and that all cans and utensils should be kept scrupulously clean by regular scalding. It cannot be too widely known that by the recent decision in the Court of Appeal in the case of Frost v. the Aylesbury Dairy Co., Ltd., that a Dairy Company can be held liable for damages for selling infected milk, although such infection was latent and not discoverable by ordinary care and skill.

The shops in the town in which milk is sold are, generally speaking, clean, and the milk utensils carefully scoured, though I find difficulty in getting the milk properly protected from dust and flies in the summer months. It is only fair, however, to say that the consumers themselves are frequently more careless than the farmers and purveyors in preventing contamination of their milk; no amount of official supervision will be of any avail so long as milk is allowed to be contaminated with dust and flies in the kitchens of the consumers. The death roll from milk and food rendered poisonous by the germs on flies and in ordinary dust in the summer months must be enormous, especially among children. The Medical Officers of Health throughout the country insist on this fact in season and out of season, but as their Reports are not read by the Public it is difficult to see how they are to be instructed in the elementary precautions necessary to prevent death and disease from contaminated food.

Drainage.

The present drainage system was designed by Mr. Baldwin Latham, and carried out it 1889, at a cost of £80,000. The bulk of the sewage flows by gravitation, but a small proportion from the low lying districts is lifted by hydraulic pumps, and the whole of it is conveyed to a Penstock chamber at the edge of the cliff ; from this it is carried in an outfall pipe 600 yards across the foreshore, and discharges into deep water at a point more than two miles to the east of the Jetty. The sea currents at this spot have such a direction, that whether the tide is ebbing or flowing, the sewage is carried away from the shore and disappears in the open sea. The dead end of the sewers are supplied with automatic flushing tanks. A large number of vent shafts have been erected, and every house is provided with an interceptor to cut it off from the main sewer. Twice a year the whole of the main sewer from the High Street to the outfall is examined and swept out by the Borough workmen. Owing to the fact that the Margate Sewerage system has recently been extended to Westgate-on-Sea, and Garlinge, and the steady increase in the growth of the Town, it has become necessary to contemplate the early enlargement of some of the main sewers. Mr. Baldwin Latham has been invited to advise the Council on this important matter, and it is to be hoped that he will shortly be in a position to recommend a scheme for carrying out this very essential work in an economical and efficient manner.

Refuse Disposal.

House refuse is collected daily over a large part of the town in the early morning, in the remaining parts on alternate days. It is taken in covered carts to the Refuse Depôt about a mile from the town, where it is burnt. In certain winds the smoke from this burning refuse is blown over some parts of the town ; it is to be strongly recommended that a modern Refuse Destructor should be provided as soon as local finances permit.

Infectious Diseases.

The greater proportion of patients suffering from Infectious Diseases are sent to the Isle of Thanet Joint Isolation Hospital at Haine, two mile from Margate. This Hospital was open in 1902, and is designed on the most modern principles. It is capable of taking 82 patients, and it is provided with single-bedded wards for private patients. A very desirable addition to this Hospital would be a convalescent ward for Scarlatina patients, such an addition would materially add to the accommodation of the Hospital, at a relatively small expense. In a convalescent ward patients would not be so liable to re-infection from more recent and virulent cases, consequently the period and cost of the detention would be curtailed, and the patients would leave the Hospital with much less chance of infecting others on their return home. There is also a special Hospital available for small pox on a separate site. Most of the important schools and institutions have provided their own sanatoria. The disinfection of infected houses, bedding, etc., of ratepayers is carried out at the public expense.

PART II.

Vital Statistics, Sanitary Work, Etc., in 1905.

Population.

The population of Margate at the last census in 1901 was 23,118; the estimated population to the middle of 1905 was 24,960. The census is taken in March, and it is on that basis of the number of persons in the town at that period of the census year that it is necessary for the vitality census to be calculated. For a large proportion of the year, owing to the influx of invalids and visitors, the population is manifestly from 10 to 20 per cent. higher than is officially estimated, and for a few weeks during the season it is probable that the population would even exceed 100,000. Another feature of the population is the large proportion of children between the ages of 5 and 15; it is estimated that there are at least 2,500 children from outside the district temporarily residing in the different schools and institutions.

Birth Rate.

The total number of births registered in the Borough in 1905 is as follows:—Boys, 211; Girls, 190; Total, 401; of these, 14 were illegitimate. The Birth-rate for the year being **16.0** per 1000. This is by far the lowest rate in the last ten years, as will be seen in the accompanying Table.

Years.	Number of Births.	Margate Birth-rate per 1000 living.	England & Wales Birth-rate per 1000 living.
1895	435	21·3	30·3
1896	425	20·4	29·6
1897	440	20·6	29·6
1898	517	23·7	29·3
1899	484	21·7	29·1
1900	483	21·3	28·7
1901	440	19·0	28·5
1902	540	22·9	28·5
1903	487	20·2	28·4
1904	463	19·0	27·9
Average for 10 years	471	21·0	28·9
1905	401	16·0	27·2

In 1904 the Birth-rate in 142 smaller towns in England and Wales was 27·5; last year it was 26·9, indicating a decrease of 0·6; in Margate, however, the fall has been from 19·0 to 16·0, a difference of no less than 3·0 per thousand; this low Birth-rate in Margate suggests a serious lack of prosperity among the working classes. It may be interesting to note that in the year 1876, when England was in a very prosperous condition, the Birth-rate of the whole country stood at the high figure of 36·3 per 1000.

Death Rate.

The total number of deaths registered from all causes within the Borough in 1905 was 325, which on the estimated population of 24,960 gives a Death-rate of 13·0 per 1000. These deaths are made up as follows:—

Residents	227
Visitors	48
Residents in Public Institutions	5
Non-Residents in Public Institutions	45
Gross total ...	325

The gross total as above is corrected as follows.—

(1) By the substraction of 45 non-residents brought into the district on account of sickness or infirmity, who died in Public Institutions in Margate.

(2) By the addition of 41 deaths of Margate people who died outside the district, viz., 31 in Minster Workhouse, 2 at the Haine Isolation Hospital, and 7 at Chartham Asylum.

This gives a corrected total of 321 or a corrected death-rate of 12.8 the same as last year, the average death-rate for the last ten years being 15·7.

By excluding the Visitors who die in the district (not in Public Institutions) the number of deaths is reduced to 273, or a further corrected death-rate of 10.9 Although the majority of visitors who die in Margate are brought here as invalids, as their deaths do not occur in Public Institutions, the Local Government Board require them to be ranked as residents for statistical purposes.

The following table shows that Margate compares favourably with other localities as regards its Death-rate.

England and Wales, 1905.

Annual Birth-rates and Death-rates from the Seven Chief Epidemic Diseases.

	Annual Rates per 1,000 Living.			Infant Mortality—Annual Death-rate of Infants under 1 Year per 1,000 Births.
	Births.	Deaths from all Causes.	Deaths from Seven Chief Epidemic Diseases.	
England and Wales ..	27·2	15·2	1·52	128
76 great towns	28 2	15·7	1·88	140
141 smaller towns	26·9	14·4	1·50	132
England and Wales less the 217 towns	26·3	14·9	1·09	113
Margate	16·0	12·8	0·72	137

Infantile Mortality.

The total number of deaths of children under one year was 55. As there were 401 Births registered during the year, the infantile mortality is equivalent to **137 per 1000** births. The rate for 1904 was 153. Although last years' death-rate is an improvement on the year before, it is still too high for a healthy town like Margate. The number of deaths from Diarrhœa is less, but this is possibly due to a more favourable summer. A large proportion of deaths in both years are undoubtedly preventible, and in many instances due to bad management and injudicious feeding. The following Table gives the cause of death among infants for the past two years.

	1904.	1905.
Measles	5	0
Whooping Cough	2	2
Diarrhœa	20	8
Enteritis	1	9
Other Septic Disease	0	1
Tuberculosis	2	0
Bronchitis	1	2
Pneumonia	0	1
Other disease of Respiratory Organs ...	1	0
Venereal Disease	2	1
Premature Birth	14	13
Accidents	3	1
All other causes	22	17
	73	55

The leaflet I issued on the Feeding and Management of Infants has been appreciated by the more intelligent class of mothers. Miss May, the

Lady Inspector of Midwives, has also given very useful advice to mothers on every opportunity. There is a certain class of careless and ignorant mothers whom it is almost hopeless to instruct with any chance of success, who have no sense of ordinary cleanliness and will feed their children on any food, solid or liquid, so long as the preparation of it gives no trouble to themselves. If one of these children happened to be run over and killed by a motor car there would at once be an outburst of public indignation, although the death might be instantaneous and practically painless; but the wretched infant who dies a lingering and painful death from careless and ignorant feeding disappears without even the passing glory of an inquest, the parents in many cases go on their way rejoicing and the Public know nothing of the little domestic tragedy. No education in school is likely to have much practical result in lessening the vast amount of preventible mortality and sickness among young infants. Very few of the mothers in the working classes have either the time or the ability to understand books or leaflets on the management of children. What is required is that they should have actual practical instruction from some properly trained and tactful visitor soon after the child's birth, who would be able to show them that it would save them trouble in the long run if they spent a little pains in preparing their child's food, in the event of their not being able to nurse it themselves.

It may be possible at some future time to enlist the services of some nurse (voluntary or otherwise) who, being fully trained in the feeding of children, might call on mothers and offer to show them the many little points in the feeding and management of infants about which most young mothers are so ignorant. This is, I believe, successfully done in some places, and is welcomed by the more intelligent mothers among the poorer classes, especially those not attended by Doctors, the only instruction they receive comes from the old-fashioned monthly nurse, who, as a rule, is densely ignorant on the subject of artificially feeding children, and is the active instigator of much unnecessary suffering in very young children.

I make no excuse for dwelling on this subject at some length because it is apt to be somewhat overlooked by Health Authorities in the multiplicity of their other responsibilities. The instructions of the Local Government Board require the Medical Officer of Health to report fully on the influences affecting the Public Health in the district, and it seems clear that the ignorant and careless management of young children is responsible for much unnecessary illness, and no reasonable effort should be neglected to remedy the evil.

School Hygiene.

The increasing amount of public attention that is being directed to the question of physical degeneration, will, I trust, be considered a legitimate reason for a reference to the Hygiene of the Public Elementary Schools. Although the responsibility for the school surroundings of the 3,060 children attending these schools in Margate is not placed under the Sanitary Authority of the Borough, the health and development of such a large proportion of the population are of far reaching importance.

The subject is too complicated to be discussed at any length in this Report, but there are a few points which are worthy of the consideration of those interested in the health and development of the coming generation. It is comparatively easy to regard the question from a purely humanitarian aspect, but the real difficulties to be faced are financial ones, and the determination of what are really necessary improvements as distinguished from ideal ones. Without venturing to go into the question comprehensively, the following are some of the points that seem to demand more immediate attention from a public health point of view. First of all, the discouraging of the attendance at Public Elementary Schools of very young children. There are 305 children between three and five years in our Margate schools. From an educational standpoint it is of little use to attempt to teach children under five or six years of age, and it is unquestionably very detrimental to their mental and physical development. It may also be noted that some of the infectious diseases, notably Scarlatina, Measles and Whooping Cough, are far more severe and fatal in the first five years of life than at a more advanced age; it is therefore desirable in the best interests of parents and children to postpone the commencement of school life and the extra risks of infection it involves. It must also be injurious to very young children to tramp to school in bad weather and sit huddled together on forms in their wet clothes. With the best intentions it must be difficult for teachers to dry their garments. Parents will probably object to the trouble of keeping their young children at home, especially in the season, but it is only fair to consider on the other hand the health of the children and the interests of the general community. For very small children we possess an excellent Crêche. This system, if necessary, could be extended. Institutions of this kind lend themselves more readily to medical supervision than infant schools. In the interests of the children's health, out of the funds saved by reducing the staff of teachers, a nurse could be appointed to see that the children were in good health and were properly looked after, paying daily visits to the schools, and in extreme cases of neglect, Sec. 1 of the Prevention of Cruelty to Children Act, might be useful in bringing drunken, careless or ignorant parents to a proper sense of their parental responsibility. At Brighton, the Education Committee have appointed a trained nurse, who also holds a Sanitary Inspector's certificate, as an extra attendance officer, with special reference to infectious and contagious diseases at a salary of £85 a year. Much excellent work has also been done in the London schools by school nurses of this sort. I hope it may be possible to follow this example in Margate. The Great Yarmouth (population, 51,250) Education Committee, which has 1,000 children under 5 years of age in its schools, has resolved not to admit any scholars under four years of age. It was complained that college trained and certificated teachers were being paid £100 a year each to nurse babies. The Barrow (population, 57,584) Committee takes the same view; it is stated that the exclusion of these infants would lessen the cost of education by £2,000, equal to a 2d. rate. Much more could be said on this question. The difficulties in equitably dealing with the feeding of underfed school children at present seem almost insuperable from a financial point of view, though it is abundantly clear that it is a great waste of the teacher's time, and consequently public money, to try and train the mind of a half starved and undeveloped child. The unnecessary suffering of the unfortunate child and the injury to its health are obvious to everyone.

Vaccination.

Through the courtesy of Mr. Jenner, the Vaccination Officer, I am able to give the results of primary vaccination for the years 1897-1904; the figures for 1905 are not yet available. It is very unsatisfactory to find that 27 out of every hundred children born in Margate are unprotected against smallpox. It is interesting to note that at Torquay, a health resort very similar in population to Margate, during the years 1898-1903 there was an average of 601 births with an average of 12 conscientious objectors, whereas at Margate during the same period there was an average of 574 births and an average of 101 conscientious objectors.

YEAR.	Total Births Registered.	Successfully Vaccinated.	Insusceptible of Vaccination.	Had Small-pox.	Number of Certificates from Conscientious Objectors.	Died Unvaccinated.	Postponed by Medical Certificate.	Removed to other Districts the Vaccination Officer of which has been apprised.	Removed—Address Unknown.	Percentage Successfully Vaccinated.	Excluding those who died Unvaccinated. Percentage.
										%	%
1897 ..	511	364	..	..	49	43	2	3	15	71	77
1898 ..	603	346	4	..	105	85	3	7	21	57	66
1899 ..	554	327	4	..	100	68	7	5	21	59	67
1900 ..	563	376	1	..	101	68	3	3	10	66	76
1901 ..	511	348	..	..	106	51	1	9	5	68	75
1902 ..	630	435	5	..	88	76	18	8	8	69	78
1903 ..	566	360	2	..	111	46	5	6	35	63	69
1904 ..	544	373	1	..	84	59	6	4	22	68	77

Zymotic Diseases. The number of cases notified under the Notification Act in 1905 was 163, which is about the average number in Margate.

Diphtheria	33	Scarlatina	109
Erysipelas	8	Enteric Fever	13

Sixty-three of the above cases were probably due to importation. This will not be surprising when the enormous number of visitors and school children who come into the town during the summer are considered. Owing to the extremely mild type of scarlatina that prevails, it is frequently the case that children suffer from the disease so slightly that their parents do not suspect the nature of the complaint, and the children are allowed to go about and infect other people. It is difficult to know how this can be prevented. The same difficulty frequently presents itself with Diphtheria; in both diseases it is possible and not uncommon for the patient to suffer from what is apparently a slight sore throat, and yet be capable of transmitting the disease in a more severe form to other people. From a Public Health point of view these very mild cases are more troublesome than cases of a graver nature which are brought under the notice of a Doctor, and are promptly isolated. In one Institution of 300 children, a smouldering epidemic of mild Scarlatina appeared to be promptly stopped by spraying the noses and throats of all the children twice a day with a solution of Perchloride of Mercury (1 in 2000).

In the Enteric cases that were not imported, it was not possible to associate the disease with any special sanitary defect, or article of food. Out of a total of 155 cases of Diphtheria, Scarlatina, and Enteric Fever, 107 were treated in the the Isolation Hospital at Haine.

Zymotic Death Rate. The following deaths occurred from the seven chief Zymotic diseases :—

Scarlatina	2
Whooping Cough	2
Diphtheria	2
Diarrhœa	11
	17

This total of 17 is a great improvement on 1904, when the Deaths from the seven chief Zymotic diseases were 43. The Zymotic death rate for 1905 stands at the low figure of 0·68, which will compare very favourably with most towns. It will be noted with satisfaction that the Diarrhœa mortality is much lower, and that there was not a single fatal case of Measles.

Tuberculosis. Next to the Zymotic diseases and the diseases due to improper feeding and management of infants, the most important preventible disease is tuberculosis. It is necessary to make special mention of this disease owing to the fact that the mortality is apparently great in Margate, owing to the large number of patients sent here on account of the remarkable reputation Margate possesses for the treatment of this disease. It is unfortunate that these patients are too frequently sent here at too late a period of the disease, in many instances they either fail to improve, or die, and thus materially increase our death-rate.

The deaths from tuberculous disease are distributed in the following way :—Residents, 32 ; visitors, 16 ; non-residents in public institutions, 22.

In Brighton, Sheffield, and other towns a voluntary system of notification of Phthisis exists ; in a town like Margate, although relatively few cases of consumption are sent here, it is desirable that we should adopt this system of notification among non-hospital cases, in many instances we should be able to assist in preventing the spread of the disease by issuing leaflets to patients, and the sanitary officials would be able to carry out the necessary disinfection. Excluding public institutions, fourteen persons died in Margate from Pulmonary Phthisis during the year.

The Midwives Act, 1902. This Act, which is intended to secure the better training of midwives, came into force on April 1st, 1905. As yet it is too early to say how it will work. It is clearly a step in the right direction, and will doubtless raise the standard of midwives and ultimately ensure, as far as is practicabie, that poor women shall be attended by Midwives who have some knowledge of their work, and at any rate are imbued with the importance of cleanliness. Seeing that no less than 60 per cent. of the births in England and Wales are attended by midwives and that there are annually 2,000 women who die from Puerperal fever (usually due to want of cleanliness), it was high time that this question should be dealt with by Act of Parliament, and that women wishing to act as midwives should give some evidence of their competency and be placed under proper control. One of the most important duties of the Local Supervising Authority, is the periodical inspection, to see that the midwives are clean in their houses, and dress, that their instruments and appliances are clean, and that they punctually carry out all the Regulations of the Central Board in London. The Sanitary Committee came to the conclusion that a lady inspector would be the most appropriate to carry out these duties, which at first would require tact and firmness and a practical knowledge of Midwifery work among the poor. The Committee were fortunate enough to secure the services of Miss May, who for five years worked as a midwife in a large London Parish, and for a further period of five years was Matron of a London Maternity Nursing Association, where she prepared pupils for the London Obstetrical Society's Examinations. Miss May has taken great interest in the work, and her report will show what has been achieved during the past nine months.

There is still much to be done to place this new work on a proper footing, in many centres committees of ladies have been formed and have been of great assistance ; there is an excellent Charity in Margate which was established 105 years ago—the Lying-in-Charity—it has already assisted 14,735 poor women in their confinements, it would be very desirable if the Local Supervising Committee could co-operate with this ancient Charity.

Miss May's Report.

"There are 8 Midwives in Margate registered under the new Act, which came into force on April 1st, 1905. Of these 8, 1 does little or no work, and 1 lives outside Margate, and only occasionally has cases within the boundaries of the Borough. Many of the patients of the 6 Midwives thus left have had doctors to attend them in their confinements, when the midwife has only acted as a nurse, so that the amount of midwifery done in Margate by Midwives is not very much for a large town with a good proportion of poor. Six of the 8 Midwives now practising have come on the Register from having been in bona-fide practise for a certain number of years, and have received no training or passed any examination in midwifery. Therefore, it has been exceedingly difficult to inspect them according to the requirements of the Act, for they need instruction as well as supervision. So all that has been aimed at for this first year has been that they shall all take simple but careful notes of their cases ; that they should be clean in their work and person ; that they should thoroughly understand the use of, and use the few necessary things they carry in their bags, though this does not include the long list of articles mentioned in the Rules, which these poor women could not afford to buy, even if they knew what they were for. No cases of misconduct or negligence have been reported, and these old-fashioned Midwives who have worked in the town for years among the poor for very small fees, are for the most part clean, respectable, sober women, and are honestly trying to comply with the new regulations. The Act has helped them by giving them a status they have never had before: they are bound to consult a medical man in all cases of difficulty, and as nearly all the doctors in Margate have put their services at the disposal of the Midwives, this is easily done, and any mismanagement would thus come immediately to light.

The Midwives have welcomed the Inspector when they found she came as a help and not a hindrance to any honest work, and they are generally willing to learn, and some exceedingly anxious to improve and qualify for the work the Government has now licensed them to do. Altogether I think we may say in Margate, that in the first year of its work, the new Act has been useful."

EDITH E. G. MAY,
(Certificated and Registered Midwife Inspector).

Factory and Workshop Acts.

During the year I have visited the various slaughter-houses, dairies, cowsheds, milkshops, bakehouses, etc., and on the whole have found them in a healthy condition, and that they complied with the Public Health Acts and Local Bye-Laws. On the occasions on which I had reason to call attention to minor breaches of regulations my suggestions were readily carried out. The slaughter-houses receive weekly visits from the Sanitary Inspector or his Assistant, who also pay frequent visits to other premises requiring sanitary supervision. The Sanitary Department is always glad to receive notice of any nuisance from either Residents or Visitors.

Borough of Margate.

REPORT

OF THE

SANITARY INSPECTOR

FOR THE YEAR 1905.

To the Chairman and Members of the Sanitary and Sewerage Committee.

GENTLEMEN,

I beg to submit the following report on work which has been carried out during the twelve months ending December the thirty first, nineteen hundred and five.

During the year 4,562 inspections and re-inspections have been made of various houses situated in all parts of the Borough, which have resulted in the following work being carried out:—

27 Houses have been connected to the Public Sewers.
26 Cesspools abolished.
3 Common Privies converted into Water Closets.
7 Pan-container Closets and D traps, and 1 worn-out valve closet removed.
32 New Closets Pans put in in the place of broken ones.
3 New Closets erected.
19 Ventilation Shafts have been reconstructed, and 2-inch ones replaced with 4-inch ones where required.
3 New ones to drains which were unventilated, and
4 Connections to Soil and Vent Pipe reconstructed.
4 Soil Pipes removed from the inside of the house to the outside.
4 Vent Shafts which were blocked at foot, unstopped.
169 Drains, Gullies, Closets, etc., which were found stopped, and overflowing, unstopped.
19 Broken drains repaired.
2 6-inch Bell traps replaced by proper gully traps.
8 Broken rain water pipes repaired.
26 New Flushing Cisterns replace broken ones.
28 Flushing Cisterns repaired.
2 Urinals erected and supplied with and Automatic Flushing Cisterns.
4 New sinks replace broken ones.

20 Sink Wastes of 4-inch Earthenware Pipes reconstructed and Lead wastes subsituted.
3 Sink wastes were directly connected to drains and untrapped.
7 New Water Service Pipes fixed.
11 Water Pipes repaired.
2 Manure Pits reconstructed, cemented internally.
279 Accumulations of Manure, Fish Offal, Refuse of an offensive nature removed.
30 Dirty Closet Pans cleansed and limewashed where necessary.
7 Houses or portions cleansed and whitewashed where required.
4 Cases of overcrowding abated.
15 Cases in which Animals where kept so as to be a nuisance have been remedied.

The Slaughter-houses have been visited weekly, and have generally been found in a satisfactory condition, and in two cases the floors have been repaired and joints raked out and cemented. The places used for sale of Fried Fish have also been kept under observation, and notices served to properly cleanse and keep the apparatus in a clean condition in two cases.

The Mortuary has also been kept in a clean condition, and has been used on 10 occasions during the past twelve months.

AMBULANCE AND DISINFECTION.

During the year we have removed by Borough Ambulance 119 cases of the various Infectious Diseases. 107 of these patients were removed to the Isolation Hospital at Haine. The number of rooms disinfected being 156. We have also disinfected the undermentioned articles by the Steam Disinfecting Apparatus at the Disinfecting Station.

173	Blankets.	6	Palliasses.
88	Pillows.	9	Cushions.
57	Mattresses.	1	Coat.
17	Bolsters.	2	Carpets.
16	Rugs.	15	Bundles of miscellaneous articles.
8	Beds.		
	TOTAL ...	392.	

FACTORY AND WORKSHOPS ACTS.

Under these Acts it is complusory to keep a register of Workshops within the district. At the present time there are no less than 374 premises upon the register, consisting of Factories, Workshops, Domestic Factories, and Domestic Workshops, consisting of the following trades:—

35	Bakers.	5	Coach Builders.
39	Builders, etc.	9	Cycle Makers.
13	Cabinet Makers.	11	Plumbers and Decorators.
46	Boot Makers, etc.	7	Picture Framers.
4	Beer Bottlers.	4	Harness Makers.
9	Smiths, etc.	1	Boat Builder.
9	Printers.	73	Laundries, etc.
1	Basket Maker.	24	Tailors.
9	Jewellers, etc.	63	Dressmakers, etc.
5	Mineral Water.	7	Miscellaneous.
	TOTAL ...	374.	

In inspecting the various premises there were found the following defects, and notices were served to carry out the work necessary as under:—

11 Bakehouses limewashed, and in 1 case more fixed ventilation by air bricks put in.
1 Water Closet provided with flushing apparatus.
5 Dirty Closet pans cleansed.
1 Dressmaker's, more ventilation provided.
1 Dressmaker's, overcrowding abated.
1 Jeweller's work-room cleansed and whitewashed.
1 Builder's Privy pit converted into a Water Closet.
4 Drains unstopped.

FOOD AND DRUGS ACTS.

During the year I have taken 101 samples of food and delivered the same in compliance with the Act to the Public Analyst, consisting of the undermentioned articles:—

6	Butters.	5	Condensed Milk.
5	Margarine.	5	Mustard.
4	Lard.	5	Pepper.
5	Sugar.	5	Baking Powder.
5	Cheese.	5	Bread.
5	Coffee.	5	Flour.
36	Milk.	5	Whisky.
	TOTAL ...	101.	

Of the Butters, five passed as genuine Butters, one was certified to contain an excess of water, but this fact was disclosed on the label at the time of purchase.

The Margarine was certified genuine, and was sold in conformity with the Act, properly labelled.

The Lard was certified pure Lard.

The Sugars passed as genuine Sugar.

The Cheese passed as genuine Cheese.

The Coffees as pure Coffee.

Of the 36 samples of Milk, 33 were certified to be genuine milk, but 6 of these were certified to contain Boracic Acid, varying from 6.21 grains per pint, to traces of the same; 1 was adulterated with extraneous water to the extent of 8 per cent., 1 also to the extent of 9.4 per cent., and also 6.21 grains of Boracic Acid; and 1 was adulterated to the extent of 16 per cent. of extraneous water, a summons was issued and a conviction obtained of 20 shillings fine, and 10 shillings costs.

The Condensed Milk was certified as calling for no adverse remarks.

Of the 5 samples of Mustard, 4 were certified genuine, and 1 to contain 5 per cent. of Starch, the same being disclosed on the label attached to the tin.

The Peppers were certified to be genuine pepper.

The Baking Powders passed as genuine and pure Baking Powders.

The Bread as genuine Bread.

The Flours as genuine Flour.

The Whiskies as genuine Spirits.

I have also condemned and seen destroyed:—

39 Wild Rabbits
60 Bananas
12 Gallon of Shrimps

which were in my opinion unfit for human consumption.

DAIRIES AND COW SHEDS.

In the latter part of the year 1904 the duty of carrying out the orders relating to the above was placed under my supervision. I, as early as practicable, formed a register of the whole of the persons carrying on the trade of Cow-keeper or Purveyor of Milk within the Borough, or District, with the result that at the present time there are

81	Purveyors of Milk;
10	Cow-keepers who keep Cows within the Borough; and
11	Cow-keepers outside the Borough, who retail their Milks from carts inside the Borough.
102	

In addition to these, there are enormous quantities of Milk delivered at the Railway Stations, more especially in the summer months, and samples of this Milk are taken on their arrival at the Stations. It is also necessary that there should be the proper amount of cubic space in each Cow Shed, in accordance with the number of Cows kept: the order specifying

800 cubic feet for each cow, if it is habitually kept indoors, and where it or they are out on grass the greater portion of the year, 600 cubic feet per cow is generally accepted as sufficient. Of the ten sheds within the Borough there is only one Cow-keeper whose Cows do not go out for a portion of the day, but I am pleased to state that the owner keeps his Cows in an exceptionally clean condition. I have measured up the whole of these sheds, and in three instances there was not enough cubic space. In shed No. 1 it was overcrowded to the extent of one Cow. This has now been remedied by removing the floor of the loft, and also more ventilation provided by opening an old window frame which had been bricked up. Shed No. 3 was overcrowded to the extent of two Cows, and badly ventilated. This has now been remedied by removing a partition and giving the extra cubic space required by taking in a stable adjoining Cow Shed; more ventilation and light has been provided by opening blocked up windows and air bricks at ceiling level. Shed No. 8 was one of the worst in the district, consisting of four sheds very badly constructed, low pitched, no light or ventilation only when the doors were open, and very bad floors. This has now been converted into one of the best, and instead of the overcrowding to the extent of five Cows which existed, a new Shed has been erected with good light, ventilation, cement floor, giving accommodation for sixteen cows, with a cubic space of 870 feet per cow. The whole of the Cow Sheds in the District may now be considered in a much more satisfactory condition than existed two years ago.

The number of Stables within the borough that have to be kept under observation in respect to the removal of manure, etc., in accordance with the Bye-Laws, is 276.

There are

11 Registered Slaughter Houses.
6 Licensed ones, and there is
1 License for slaughtering Horses, etc.

Total 18

In carrying out this work I have to thank the Assistant Sanitary Inspector (Mr. Brown) for the ready assistance he has at all times rendered.

I am, Gentlemen,
Yours obediently,
EDWD. ELLIOT, Assoc. San. Inst.,
Chief Sanitary Inspector.

February 2nd, 1906.

TABLE I.

VITAL STATISTICS OF MARGATE DISTRICT DURING 1905 AND PREVIOUS YEARS.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.		TOTAL DEATHS REGISTERED IN THE DISTRICT.				TOTAL DEATHS IN PUBLIC INSTITUTIONS IN THE DISTRICT.	Deaths of Non-Residents registered in Public Institutions in the District.	Deaths of Residents registered in Public Institutions beyond the District.	NETT DEATHS AT ALL AGES BELONGING TO THE DISTRICT.	
				Under 1 Year of Age.		At all Ages.						
		Number.	Rate.*	Number.	Rate per 1,000 Births registered.	Number.	Rate.*				Number	Rate.*
1	2	3	4	5	6	7	8	9	10	11	12	13
1895	20367	435	21·3	59	135	340	16·6	..	24	49	365	17·2
1896	20826	425	20·4	61	143	326	15·6	..	37	38	327	15·7
1897	21285	440	20·6	62	139	348	16·3	..	20	37	365	17·1
1898	21744	517	23·7	82	158	329	15·1	..	22	40	347	15·9
1899	22203	484	21·7	96	198	3 2	17·6	..	19	39	412	18·3
1900	22662	483	21·3	82	169	358	15·7	..	27	45	374	16·5
1901	23121	440	19·0	57	129	335	14·4	64	41	37	331	14·3
1902	23580	540	22·9	86	159	373	15·8	38	42	43	384	16·2
1903	24039	487	20·2	53	108	325	13·5	57	41	37	321	13·3
1904	24263	463	19·0	71	153	332	13·6	71	63	42	311	12·8
Averages for years 1895-1904	22409	471	21·0	70	149	345	15·4	..	33	40	353	15·7
1905	24960	401	16·0	55	137	325	13·0	50	45	40	320	12·8

*Rates in Columns 4, 8, and 13 calculated per 1,000 of estimated population.

Total population at all ages, 23,118. Number of inhabited houses, 4,359. Average number of persons per house, 5·3

Area of District in acres (exclusive of area covered by water), 1,489, at Census of 1901.

Institutions within the District receiving sick and infirm persons from outside the District:—1, East Cliff House (Metropolitan Asylums Board); 2, Convalescent Home for Children, Grosvenor Place; 3, Royal Sea Bathing Hospital; 4, Rob Roy Cripples' Home; 5, Victoria Home for Invalid Children, Sea View Terrace; 6, Chateau Belle Vue Infirmary; 7, Churchfield House Convalescent Home; 8, West Ham Union Convalescent Home. The Cottage Hospital receives a few patients from outside the District.

Institutions outside the District receiving sick and infirm persons from the District:—1, Lunatic Asylum at Chartham; 2 Workhouse at Minster; 3, Fever Hospital at Haine. There is no Union Workhouse within the District.

TABLE III.

CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1905 IN THE MARGATE URBAN SANITARY DISTRICT.

NOTIFIABLE DISEASE.	CASES NOTIFIED IN THE MARGATE DISTRICT.						NO. OF CASES REMOVED TO HOSPITAL FROM MARGATE DISTRICT.
	At all Ages.	At Ages—Years.					
		1 to 5.	5 to 15.	15 to 25.	25 to 65.	65 and upwards.	
Small-pox	...	...	...	...	...	...	...
Cholera	...	...	...	..	...	..	...
Diphtheria	33	5	25	2	1	...	19
Membranous Croup	...	...	...	...	...	...	...
Erysipelas	8	...	1	1	6	...	...
Scarlet Fever	109	35	62	7	5	...	78
Typhus Fever	...	...	...	...	...	...	...
Enteric Fever	13	1	5	...	7	...	10
Relapsing Fever	...	...	...	...	...	...	...
Continued Fever	...	...	..	...	...	...	...
Puerperal Fever	...	...	..	...	...	...	...
Plague	...	...	...	...	...	...	...
Totals	163	41	93	10	19	...	107

Isolation Hospital: Isle of Thanet Joint Board Hospital, at Haine.

TABLE IV.

CAUSES OF, AND AGES AT, DEATH DURING YEAR 1905 IN THE DISTRICT OF MARGATE.

CAUSES OF DEATH.	DEATHS AT THE SUBJOINED AGES OF "RESIDENTS" WHETHER OCCURRING IN OR BEYOND THE DISTRICT.							Total Deaths whether of Residents or Non-"Residents" in Public Institutions in the District.
	All ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	
Small-pox	...	..	...	...	...	...	...	...
Measles	...	...	...	...	...	...	...	...
Scarlet fever	2	...	...	1	1	...	...	...
Whooping-cough	2	2	...	...	...	...	...	...
Diphtheria and membranous croup	2	...	1	1	...	...	...	...
Croup	...	...	...	...	...	...	...	...
Fever :—								
Typhus	...	...	...	..	...	...	...	...
Enteric	...	...	...	...	...	...	...	...
Other continued	...	...	...	...	...	...	...	...
Epidemic Influenza	1	...	...	...	...	1	...	...
Cholera	...	...	...	...	...	...	...	...
Plague	...	...	...	...	...	...	...	...
Diarrhœa	11	8	3	...	...	...	...	...
Enteritis	11	9	...	...	..	...	2	...
Puerperal Fever	...	...	...	...	...	...	...	..
Erysipelas	...	...	...	...	...	...	...	...
Other septic diseases ...	5	1	...	1	...	2	1	2
Phthisis (Pulmonary Tuberculosis)	30	...	...	..	7	21	2	11
Other tubercular diseases ...	18	...	4	8	1	5	...	12
Cancer, malignant disease ...	18	...	...	...	1	10	7	2
Bronchitis	15	2	2	...	...	2	9	1
Pneumonia	15	1	2	1	1	6	4	...
Pleurisy	...	...	...	...	...	...	...	...
Other diseases of Respiratory organs	7	...	...	...	1	5	1	...
Alcoholism—Cirrhosis of liver	7	...	...	...	...	7	...	1
Venereal diseases	3	2	...	...	...	1	...	...
Premature birth	13	13	...	..	...	...	...	...
Diseases and accidents of parturition	...	...	...	...	...	...	...	...
Heart diseases	28	...	...	1	1	13	13	7
Accidents	8	1	1	...	2	3	1	2
Suicides	4	...	...	...	1	3	...	...
All other causes	120	17	4	2	1	31	65	12
All Causes	320	56	17	15	17	110	105	50

TABLE V.

INFANT MORTALITY DURING THE YEAR 1906.

DEATHS FROM STATED CAUSES IN WEEKS AND MONTHS UNDER ONE YEAR OF AGE.

CAUSE OF DEATH.		Under 1 Week.	1–2 Weeks.	2–3 Weeks.	3–4 Weeks	Total under 1 Month.	1–2 Months.	2–3 Months.	3–4 Months.	4–5 Months.	5–6 Months.	6–7 Months.	7–8 Months.	8–9 Months.	9–10 Months.	10–11 Months.	11–12 Months.	Total Deaths under 1 year.
All Causes.	Certified	7	5	1	2	15	11	3	5	3	3	4	..	2	2	1	..	49
	Uncertified	3	1	1	..	5	..	..	..	..	..	..	..	..	..	1	..	6
Common Infectious Diseases.	Small-pox	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Chicken-pox	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Measles	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Scarlet Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Diphtheria : Croup ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Whooping Cough ..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	2
Diarrhœal Diseases.	Diarrhœa, all forms ..	..	..	1	..	1	2	..	..	1	..	..	..	2	1	1	..	8
	Enteritis (*not Tuberculous*) ..	..	..	1	..	1	2	..	1	..	..	1	..	..	..	..	..	5
	Gastritis, Gastro-intestinal Catarrh ..	..	1	..	1	2	..	..	1	1	..	..	..	..	..	..	..	4
Wasting Diseases.	Premature Birth ..	5	4	..	1	10	2	1	..	..	..	..	..	..	..	..	..	13
	Congenital Defects ..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1
	Injury at Birth	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Want of Breast-milk ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Atrophy, Debility, Marasmus ..	..	1	..	..	1	3	..	1	..	1	1	..	..	1	..	..	8
Tuberculous Diseases.	Tuberculous Meningitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Tuberculous Peritonitis: Tabes Mesenterica ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Other Tuberculous Diseases ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Erysipelas	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Syphilis	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1
	Rickets	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Meningitis (*not Tuberculous*) ..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1
	Convulsions	1	..	..	..	1	..	..	..	..	..	1	..	..	..	1	..	3
	Bronchitis	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	2
	Laryngitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Pneumonia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Suffocation, overlaying	1	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	2
	Other causes	3	..	..	..	3	1	..	1	..	..	..	..	..	..	..	..	5
		10	6	2	2	20	11	3	5	3	3	4	..	2	2	2	..	55

BIRTHS IN THE YEAR { Legitimate : 387. Illegitimate : 14.

POPULATION
(Estimated to middle of 19C5):
24,960.

DEATHS FROM ALL CAUSES AT ALL AGES : 325.

Borough of Margate.

ANNUAL REPORT

OF THE

METEOROLOGY

For the Year 1905,

FROM OBSERVATIONS TAKEN AT

"Westlands," Grosvenor Place.

LONGITUDE 1°24″ E. LATITUDE 51°24″ N.
HEIGHT ABOVE SEA LEVEL 55 FEET.

Climatological Station of the Royal Meteorological Society.

To the Chairman and Members of the Sanitary Committee.

GENTLEMEN,

I have pleasure in again presenting herewith the Annual Report relating to the weather conditions of the Borough during the past year. It is the 14th in number; but the majority of the Instruments have been in use for 24 years, and the figures for that period are all available.

The general character was not quite so favourable as during the previous year. 2½ inches more rain, mostly in large amounts; a slightly less average temperature; a little more total cloud, and as may therefore be expected, less sunshine, and a most regrettable break-up of the fine weather in early September, if not somewhat so in the last week of August. On the other hand all the winter months were milder, and there were but a small number of frosts.

The Barometer

Averages 30.020 rather below last year and ranging from 30.9 at the end of January, to 28.9 in the middle of November, a range of 2 inches. There were some high readings about the former of these dates, and again in the second week in November. There were just a score of clearly marked risings and fallings of this Instrument, very well traced as heretofore on the Richard Barograph. Accompanying these depressions came, on about ten occasions, what were registered quite or nearly so as gales. With one of these the wind blew from the N.E., on all the others from S.W. to N.W.

Thermometers.

Readings on each day are taken from a dozen Thermometers, from some of them more than once; and from these, numerous observations are deduced some of our most important results. The average daily temperature was 50°.5 (50°.8 in 1904), from the combined figures of the maximum and minimum hung in a Stevenson's Screen (49°.6 for the 20 years' average). This figure is confirmed as is universally the case by the average reading of the Dry Bulb at 9 a.m. which gave 50°.3. The results were above the average in the first 7 months of the year, and in December; just equalled it in August and September combined; and there was a lower average only in October and November. The four quarters show respectively + 2°.3; + 1°.4; + 1°.4; —1°.3. I would especially draw attention to the mildness of our nights; the very low range (9°.9) between the day and night readings; and the small number of frosts. Of the latter it is notable there was not one between April 9th and October 17th, a period of 27 weeks. July was the warmest month; January the coldest. Three times the maximum shade temperature exceeded 80°, the 29th of May, and the 14th and 22nd (81°) of July. Only in the first month of the year did the Instrument, placed on the open grass, fall below 20° and that but once. The slight daily changes in the heat are marked features of our town; a column in our tables shew this; difference between each morning reading at 9 a.m. averages but 3°.1 and on only 11 times did that change 10°, the most was thus: —

January	16th	... ...	23°.6
,,	17th	... ...	39°.8

showing a rise of as much as 16°2. In several previous reports I have shewn the days on which the maximum thermometer reached certain degrees. This I repeat:—

Over 20° and	30° and	40° and	50° and	60° and	70° and	80° and	90°
1905	9	116	117	80	40	3	...
1904	21	92	116	96	36	4	1
Average 8 years	20	87	122	92	39	5	...

Earth Temperatures.

This is a matter of great importance, and the four Thermometers for this purpose have been regularly read. They are inserted in iron tubings to the depths of six, twelve, twenty-four and forty-eight inches. During the first four and the last four months the deepest one read the highest; in May, July and August that at 12 inches; and in June the one of least depth. The lowest reading was 35° from the six inch in the middle of January, and the highest was 68° in the middle of August, registered from the Thermometer at one foot. Special interest attaches to the summer figures of the four foot instrument, down to which sudden changes on the surface take nearly four days to travel, and many will read with interest that it reached 56° on June 20th and continued at or above that figure till October 8th, a total length of 110 days; the maximum was just over 62° in the first week of August.

Rainfall. This branch of our observations keenly affects all, and perhaps with most results in the summer season. The total fall for 1905 was 21.18 inches, just 2½ inches above that of 1904, and about 1½ below the Margate average. Measurable quantities fell on 172 days, a more than usual number, but leaving still 193 rainless days, in addition to 27 days when .01, the smallest amount we can get, was marked. There were no lengthy periods either with or without rain; there was none from the 5th to the 11th of June, while from the 8th to the 26th of December it was almost rainless. On the other hand rain fell on 12 following days in March. It is very interesting to note that I have complete rainfall records for 25 years. Taking these for each five-year period, the result thus comes out:—

From	1881	to	1885	...	...	23.86	per year on	167	days.
,,	1886	,,	1890	...	...	23.16	,,	164	,,
,,	1891	,,	1895	...	...	23.43	,,	167	,,
,,	1896	,,	1900	...	...	22.70	,,	151	,,
,,	1901	,,	1905	...	...	19.80	,,	160	,,
					Or	22.60	in all.		

There have only been two years when over an inch fell three times in the 24 hours, in 1894 and last year. For the latter the dates are 5th June, 1.80 inches; 26th September, 1.75; and 10th April, 1·08. I append for the first time the figures taken at the Waterworks at Wingham, belonging to the Borough of Margate, by Mr. W. R. Hosking.

	Fall.	Maximum.	Days of Rain.
January	1·	·62	10
February	0·68	·37	9
March	2·89	·54	18
April	2·70	·86	14
May	1·17	·66	7
June	3·81	2·08	10
July	0·78	·38	5
August	1·87	·31	12
September	2·33	·84	14
October	2·17	1·02	14
November	3·74	1·09	23
December	0·59	·18	12
Wingham	23·73	..	148
Margate	21·18	..	172

There was, therefore, 1½ inches more than with us, and the monthly totals are not identical. There were less rainy days. The maximum fall was on the same day, June 5th.

Sunshine.

The total Rainfall and the total Sunshine call out the greatest amount of public attention. The details of the latter are herewith duly chronicled. There were during the year 1,577 hours; in 1904, 1,631; for the average of 14 years, 1,600. In London the registered total was 1,320, less than with us each month, and this was just about the average for the Metropolis. In the six months, October to March, we had 495 hours against 344 in London. The sun marked the card on as many as 291 days, and it is, duly dated, exhibited daily on the Jetty Board. Having been found that the metal frame had sagged, after 14 years of exposure through all the seasons, it was decided to obtain a new one and this was done through the Meteorological Office, and properly fixed last autumn.

The Wind.

As in every previous year the westerly winds predominated. Exactly two-thirds of the daily entries were from S. or the points with west. This was the case not only in the total, but in all the months with the exception of May and June, both showing a very slight leaning to the east. The average force of the wind (0 calm, 7 gale, 12 hurricane, Beaufort's scale) was three, last year 2.5. Highest in October; lowest in December. The prevalence of south-westerly breezes in January, February, March, April, November and December, and north-westerly in October cannot be too widely known. Daily observations made at 9 a.m.:—

	N.	NE.	E.	S.E.	S.	S.W.	W.	N.W.	Calms.
1905 ...	15	54	16	28	20	126	48	46	12
1904 ...	11	35	26	38	26	113	49	56	12
20 years' average	33	33	44	22	40	80	58	22	33

Phenonema.

Daily notes are made of any particular meteorological phenomena occurring. There were needed but few entries for snow falls, dew, mist, thaw, sleet, rainbows, hail (5 times), lunar corona and halo; fogs were only entered 5 times; thunderstorms on 3rd May, 5th and 12th June, 5th July, and 27th August; thunder alone, and lightning alone occasionally, a fine "mackerel" sky once; a peculiar fall of Graupel or soft hail, January 16th; several lovely sunsets are noted, especially in May, June, July, September, October and December; choppy and rough seas with northerly winds were frequent. For the eclipse of the moon, February 19th, the climatic conditions were most favourable; but with that of the sun, in August, it was unfortunately the reverse.

Distribution.

These figures have throughout the year been again made well-known; as far as the Town Council is concerned more so than heretofore. As, however, I pointed out last year, most of the watering places still go to much more expense than we do by inserting the records in certain prominent columns devoted to meteorological news in the London daily papers. We publish or make known :—

(1) DAILY.—A telegram sent to the principal London Railway Stations for public exhibition. A morning wire to the Exchange Telegraph Company, Limited, which is forwarded to clubs, hotels, evening papers, etc. An evening wire to the Government Meteorological Council, which is supplied to the morning papers and to many others. From this and similar telegrams the forecasts are drawn, also an item, "General Situation" in the daily report, and in this summary. On two dozen times the Margate temperature, sunshine, etc., were of such a nature as to call for special attention, and these references were seen by large numbers of readers. Lastly, the daily exhibition on the board still kindly allowed to be affixed at the entrance of the Jetty.

(2) WEEKLY.—Summaries published in "Keble's Gazette"; "Thanet Times"; "The Financial News"; the Government Weekly Weather Report.

(3) MONTHLY.—To the Royal Meteorological Society; and information supplied towards an interesting weather column in the "Daily Telegraph."

(4) YEARLY.—Rainfall figures sent to "British Rainfall."

I have, as usual, replied to a large number of enquiries.

I believe great interest is taken in these statistics, and it is my desire to make them as full and complete, and as widely known as possible.

I have the honour to be, Gentlemen,

Your obedient servant,

JOHN STOKES, F.R., Met. Soc.
Meteorologist to the Borough of Margate.

Grosvenor Place,
February 17*th*, 1906.

EXTREMES AT MARGATE.

1905.	BAROMETER.		THERMOMETERS.			
	Highest.	Lowest.	Max.	Min.	Grass.	Black Bulb.
			°	°	°	°
JANUARY ...	30·921	29·275	51·7	20 5	18·2	77
FEBRUARY...	·544	·265	53·5	31·6	30 6	86
MARCH	·304	·124	59 1	31·7	29·	110
APRIL	·358	·398	63·7	33·2	27·	110
MAY	·490	·460	80 8	37·6	34 5	125
JUNE	·454	·768	75·6	50·4	49 3	127
JULY	·284	·900	81·1	53·6	51·	132
AUGUST ...	·344	·324	72·	46·6	44·	125
SEPTEMBER	·406	·699	75·1	44 7	40·	119
OCTOBER ...	·474	29·422	57·9	33·4	30·2	101
NOVEMBER	·248	28 932	55·6	31·3	26·	83
DECEMBER	30·848	29·216	55·3	30·6	23·	76
	30 921	28·932	81·1	20·5	18·2	132
	January 29	November 13	July 22	January 2	January 2	July 25

METEOROLOGICAL OBSERVATIONS, MARGATE, 1905.

AVERAGES. TOTALS.

1905	BAROMETER.	BULBS.		Relative Humidity.	Difference at 9 a.m.	THERMOMETERS.						EARTH.				Cloud (0 to 10)	RAINFALL.						SUNSHINE.			FROSTS.	
		Dry.	Wet.			Max.	Min.	R'nge	***Av'ge***	Diff. from 20 yrs.	On Grass	Foot ½	Foot 1	Feet 2	Feet 4		Fall.	Diff. from 20 yrs.	Days With	Days Not	Max. Fall.	Day.	H'rs.	Days With	Days Not.	Scr'n	Grass
		°	°	%	°	°	°	°	°	°	°	°	°	°	°		Ins.	Ins.									
JANUARY ..	30·322	38·5	36·9	86	3·9	43·4	34·8	8·6	**39·1**	+0·3	32·4	38·7	39·6	42·4	45·	6·4	0·70	—1·00	10	21	0·26	16	71·3	24	7	8	17
FEBRUARY	30·188	41·2	39·3	85	3·2	46·	38·2	7·8	**42·1**	+2·6	36·4	41·1	41·5	42·9	44·5	7	0·70	—0·80	13	15	0·16	26	86·1	20	8	2	6
MARCH	29·775	45·7	43·2	82	3·0	50·9	41·1	9·8	**46·**	+4·1	38·6	43·8	44·1	44·4	45·2	6·7	1.84	+0·37	21	10	0·22	13	142·2	27	4	1	2
APRIL	29·839	46·8	43·8	78	2·8	52·6	41·9	10·7	**47·2**	+0·6	39·4	46·9	47·2	47·2	47·4	8·6	2·89	+1·57	18	12	1·08	10	116·2	27	3	..	4
MAY........	30·132	53·2	48·9	73	2·9	59·2	47·2	12·	**53·2**	+1·4	43·7	53·3	53·5	51·7	50·9	4·6	1·00	—0·55	8	23	0·46	1	256·8	30	1	..	..
JUNE	29·944	59·9	56·4	79	2·7	64·7	54·8	9·9	**59·7**	+2·2	52·	60·1	59·9	57·5	55·6	7·2	4·04	+2·50	17	13	1·80	5	169·1	21	9	..	..
JULY	30·111	65·8	61·5	77	2·7	73·2	59·	14·2	**66·1**	+4·4	56·1	66·	66·1	62·9	60·3	5·7	0·70	—1·41	7	24	0·37	4	233·9	31	..	..	..
AUGUST	29·907	62·2	57·8	75	2·9	68·1	55·9	12·2	**62·**	+0·1	52·	62·7	63·	62·3	61·4	5·8	1·57	—0·37	13	18	0·41	19	184·5	28	3	..	..
SEPTEMBER	30·051	58·	54·9	82	2·6	63·5	53·7	9·8	**58·6**	—0·1	50·9	58.1	58·5	58·8	58·9	7·6	3·30	+1·31	15	15	1·75	26	122·3	26	4	..	..
OCTOBER ..	30·031	47·3	44·6	80	4·1	52·	42·7	9·3	**47·3**	—3·5	40·	48·6	49·5	52·6	54·5	6·7	1·66	—1·17	17	14	0·68	30	110·4	26	5	..	4
NOVEMBER	29·737	43·6	41·4	83	3·4	47·8	39·7	8·1	**43·7**	—1·7	36·5	43·2	45·	47·6	49·8	7·8	2·42	..	21	9	0·66	11	56·6	18	12	2	6
DECEMBER	30·206	41·5	40·3	90	3·5	45·2	37·9	7·3	**41·5**	+1·3	35·1	42·4	43·1	45·2	47·1	8·8	0·36	—1·87	12	19	0·08	5	27·9	13	18	4	9
1905	30·020	50·3	47·4	81	3·1	55·5	45·6	9·9	**50·5**	+0·9	42·7	50·4	50·9	51·3	51·7	6·9	21·18	—1·42	172	193	1·80	J'ne 5	1577·3	291	74	17	48
1904	30·034	50·5	47·5	80	3·3	56·1	45·6	10·5	**50·8**	+1·2	42·7	50·6	51·2	51·3	51·6	6·7	18·67	—3·93	157	209	0·85	Oct 7	1631·	286	80	29	54